- 10 -

CLAIMS

- 1. Use of an immobilised transition metalcarbonyl complex as a catalyst in a Pauson-Khand reaction.
- 5 2. Use of an immobilised π -alkynetransition metalcarbonyl complex as a catalyst for the Pauson-Khand reaction.
 - 3. Use of a catalyst as claimed in claim 1 or 2 wherein the transition metal is selected from cobalt, rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.
 - 4. Use as claimed in claim 3 wherein the transition metal is cobalt.
- 10 5. A process for the preparation of a cyclopentenone compound or analogue thereof which comprises either;

reacting an alkyne, an alkene, and carbon monoxide in the presence of an immobilised transition metalcarbonyl catalyst; or

reacting an alkyne, an alkene, and carbon monoxide in the presence of an immobilised alkynetransition metalcarbonyl catalyst.

- 6. A process as claimed in claim 5 wherein the transition metal is selected from cobalt, rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.
- 7. A process for the preparation of a resolved or partly resolved cyclopentenone compound or analogue thereof which comprises either;
- 20 reacting an alkyne, an alkene, and carbon monoxide in the presence of a resolved or partially resolved immobilised heterobitransition metalcarbonyl catalyst; or

reacting an alkyne, an alkene, and carbon monoxide in the presence of a resolved or partially resolved immobilised heterobitransition metalcarbonyl catalyst.

- 8. A process as claimed in claim 7 wherein each transition metal is selected from cobalt,
- 25 rhodium, iridium, tungsten, molybdenum, titanium, nickel, iron and ruthenium.